

RECORD OF LATEST BOARD MEETING

Constitution Changes Occupy Floor at Detroit Sessions

Minutes of the meeting of the Board of Directors of the A.S.S.T., held at Hotel Statler in Detroit, Oct. 1, 1933. Present: W. B. Coleman, W. H. Phillips, W. H. Eisenman, H. D. McKinney, R. S. Archer, H. G. Keshian, A. H. d'Arcambal. Absent: A. T. Clarage and C. F. Pascoe.

Upon motion by Mr. d'Arcambal, seconded by Mr. Phillips, and unanimously carried, the minutes of the previous meeting were approved as read.

The secretary then presented a progress report for the 1933 Metal Exposition, the Handbook, Metal Progress, National Metal Congress and the Official Program.

These were accepted as reports of satisfactory progress.

The board of directors then gave consideration to the proposed changes in the Constitution of the Society as shown on galley proofs submitted for their consideration. The purpose of the meeting was for the board to familiarize themselves with the proposed changes and to make such other comments and give the matter further consideration as might be required.

Each of the sections was gone over and the changes noted, and while no formal motion of approval was made, nevertheless the proposed changes were laid over for consideration at the meeting of the board on Tuesday morning.

President Coleman submitted a report, in response to the circular letter that he had forwarded to the officers and members of the executive committee of the chapter with reference to additional suggestions as to a proposed name for the Society.

The board then gave further consideration to the report and it was agreed that no formal action would be taken but that the matter should be considered at the meeting on Tuesday.

Upon motion properly made, seconded and unanimously carried, the meeting adjourned.

An adjourned meeting of the Board of Directors of American Society for Steel Treating was held at Hotel Stat-

(Continued on Page Two)

ROCKFORD HEARS OF A NEW INSTRUMENT

Maximeter Indicates Where to Temper for Highest Toughness

By Freeman G. Anderson

On Oct. 13 the Rockford chapter witnessed the first public demonstration of the Greenlee Maximeter, an instrument for measuring the effect of heat in the treatment of steels. An entirely new theory of heat specification, especially for drawing temperatures, was explained.

The Maximeter has many applications in the metallurgical laboratory, but the especially interesting tests were those that develop a Maxipoint for each steel. This coined word means that point or temperature at which hardness just gives way to ductility or brittleness to toughness. It was shown that this point varies from 280° F. to 750° F. in the steels used in one industry.

Using Maxipoint or "Zero" as a base for specifications of draw temperatures, the engineer may intelligently lessen the draw temperature or add to same to suit the mechanical requirements.

The demonstration was by J. H. Abramson, works manager of Greenlee Bros. & Co., Rockford, who is responsible for the development of the instrument which has taken 15 years. It is a new device and abridges many other methods of testing and is extremely sensitive, showing effects of changing draw temperature as little as 10° F.

The Maximeter aids in finding proper hardening temperature and time, and compares results from use of different heating and quenching mediums.

A changed analysis of steel may be detected by its effect or change of Maxipoint. Adding 0.36% moly in one instance lowered the Maxipoint 325° F.

REVIEW 3 CONVENTION PAPERS AT OCT. 13 LEHIGH MEETING

Local Members Prepare Resumes By H. F. Paulus

The Lehigh Valley chapter held its first 1933-1934 meeting on Oct. 13. The comfortable appointments of the Seminar Room in Packard Engineering Building at Lehigh University were greatly enjoyed by about three-score members and friends.

Professor L. F. Witmer introduced the speakers, all of whom were local talent. Resumes of three papers presented at the recent Detroit convention were favorably received.

"The Heat Treatment of Cast Iron," by C. H. Morken, was delivered by Bradley Stoughton, head of the department of metallurgy at Lehigh. Joseph Weil, Ingersoll-Rand Co., then read the paper by Wills and Findley, "Some Factors Affecting the Physical Properties and Corrosion Resistance of 18-8 Chromium-Nickel Steel Wire." A discussion of "Present Status of Age Hardening," as written by R. H. Harrington, was made by H. F. Paulus of Bethlehem Steel Co.

Considerable discussion followed the presentation of these three papers, which indicated keen interest on the part of the audience. Refreshments added further to the enjoyment of the evening.

250 ATTEND COLD HEADING MEETING

Cleveland's Opening Meeting Features Harvey and Pulsifer

The Cleveland chapter opened the new season's activities with two talks on cold heading, on the 9th of October. Carl Harvey, Lamson & Sessions Co., discussed wire drawing, wire coatings, dies, upsetting and roll threading. H. B. Pulsifer, Ferry Cap & Set Screw Co., gave a short summary of materials that are cold-headed, illustrating the more intimate nature of the materials with slides showing typical microscopic structures.

The dinner and meeting afterwards were very well attended; over 90 gathered at the tables and some 250 were on hand for the speaking. Possibly the coffee talk speaker, Russell Weisman, professor of economics at Western Reserve University, was responsible for the good attendance. It was announced that he would speak on certain features of the N. R. A., and he well maintained his reputation as a clear analyst and forceful critic.

Chairman Van Horn then made a brief summary of the Metal Congress at Detroit and, with considerable pride, displayed the President's Bell that was awarded the Cleveland chapter this year. Gordon Williams, chairman of the educational committee, then presented Robert Kinkead who is giving the course of lectures on "Weld Design and Production."

The meeting was then turned over to L. S. Cope, metallurgist of the National Screw & Mfg. Co., who made a few pertinent remarks about the local cold heading industry and presided during the addresses by Harvey and Pulsifer.

ROCHESTER'S TOOL MEETING PROVOKES MUCH DISCUSSION

W.G. Gordon and L.K. Marshall Speak

By J. M. Keating

The second regular meeting of the Rochester chapter for this year was held at the University of Rochester on Oct. 9. Barry Huntley, our program chairman, pulled a double header for this meeting in having two speakers from the Delco Corporation.

William G. Gordon, tool engineer, spoke on "The Economical Design of Dies and Other Tools," and L. K. Marshall, superintendent of heat treating, spoke on "Application of Tool Steels in Dies and Other Tools." Both addresses were well received and some good practical points were brought out. Charlie Codd opened the discussion and was followed by Frank McDonald. J. A. Nolan posed some leading questions, as did Bob Kimber. Good old I. C. Matthews also had some questions. The discussion was later entered into by E. W. Moore and T. W. Knight.

HARDEN RAILS ON JOB ELECTRICALLY

Golden Gate Studies Portable Heat Treating Equipment

By S. Craig Alexander

A very interesting reversal of the usual methods of heat-treating wherein the heat-treating equipment is taken to the steel instead of the steel to the heat-treatment was described at the September meeting of the Golden Gate chapter by H. E. Morse, R. E. Frickey, and A. S. Kalenborn. In the development described, Mr. Morse was responsible for the metallurgical details while Mr. Frickey and Mr. Kalenborn worked out the mechanical and electrical details.

As is well known, rail ends in service suffer severe and destructive batter. The usual way of handling battered rail ends has been to cut away the battered portion, lay on an overlay of alloy steel by welding, and grind down to form.

The problem was to prevent the excessive batter of the ends before they reached the condition necessitating the cutting away, overlay and grinding. An essential aspect of the problem was to do this in such a way as to eliminate all possibility of the development of incipient cracks likely to produce spalled surfaces under traffic conditions.

In studying the problem, the various possible methods of heating and quenching were given exhaustive consideration. The electrical method of heating was finally hit upon as affording the ideal method of heating, with a maximum of uniformity and ease of control. The oil-quench was decided upon as fulfilling the conditions most satisfactorily and producing a maximum of uniformity in its quenching effects.

The operations as developed include grinding for leveling and the removal of any decarburized surface, preheating to a predetermined temperature, heating, and a combined quench and draw. The action of the oil in the combined quenching and drawing operation is such that brittle martensite is not formed, but the steel is caught and held in the hard but tough sorbitic condition.

The equipment is very ingenious, and gives practically automatic control: A definite temperature setting, a definite amount of heat and a definite time being provided for each operation, varying with the particular type and weight of rail. The effect is to change the original pearlitic structure of the hot-rolled rail ends to the more desirable and wear-resisting sorbitic structure, and the hardness from the original of about 225 to consistently around 425 Brinell.

A.S.S.T. JOINS WITH A.S.M.E. IN HEAT TRANSFER SESSION

Is Event of A.S.M.E. Convention

A headlined attraction at the forthcoming annual meeting of the American Society of Mechanical Engineers, in New York, Dec. 5-8, is to be a symposium on heat transfer.

At the request of the A. S. M. E., the American Society for Steel Treating is co-operating in the Tuesday afternoon session, Dec. 5, by sponsoring three papers.

M. H. Mawhinney, Electric Furnace Co., Salem, O., has prepared a paper on "Fuel Fired Heat Treating Furnace Transfer Rates," and R. D. Van Nordstrand, of General Electric Co., has written a discussion of "The Transfer of Heat in Electric Furnaces." The third paper, by Howard Scott, Westinghouse Electric & Mfg. Co., is entitled "The Problem of Quenching Media for the Hardening of Steel."

All members of the A. S. S. T. are cordially invited to attend this and other sessions on the program.

1933 HANDBOOKS!

Members in good standing who have not yet received their copy of the new National Metals Handbook may do so by sending in their copy of the 1930 Edition to A.S.S.T. offices, 7016 Euclid Ave., Cleveland.

A copy of the 1933 Edition will be sent immediately in exchange.

LUCAS TALKS ON MICROSCOPY AT CHICAGO'S FIRST MEETING

Tells Present Status of Art

The first meeting of the Chicago chapter in the 1933-34 season, held on Sept. 29, was favored by an inspiring address by Francis F. Lucas. It was a joint meeting with the Chicago chapter of the A. I. M. E., these two groups meeting together to hear from Dr. Lucas his latest developments in microscopy.

The talk was voted to be one of the most fascinating given here in a long time. It dealt with the microscope as an instrument of research, its development from the crude early Dutch and English instruments, and present modifications in construction and technique by the speaker himself. It was a story of painstaking research and tireless attention to detail.

The results have been applied not only to the study of metals but, more recently, to a fruitful series of biological investigations. Subsequent questions elicited interesting answers on preparation of specimens and methods of photography, thus completing a most profitable evening.

The chairman of the program committee, Harvey Anderson, has been active in securing a most excellent program for the coming year.

NEW JERSEY HOLDS WELDING MEETING

Everett Chapman as Speaker Gives Practical Pointers

Ernest O. Olds

The regular monthly meeting of the New Jersey chapter was held Oct. 9, at the Elks' Club, Newark.

An interesting short talk on the subject, "Have our experiences with our European friends been beneficial in the past?" was presented by Gilbert S. Walters, general manager, Oiline Refining Co. of America. Mr. Walters' experiences and observations, gathered during several recent trips abroad, very definitely tended to prove that our experiences had not been beneficial in the past.

The main talk of the evening on "Fabricating and Welding" was presented by Everett Chapman, vice-president of Lukenweld, Inc., Coatesville, Pa. Mr. Chapman showed in detail methods which had been developed and new designs perfected by which welded structures and castings were produced successfully in commercial practice.

A lengthy discussion followed in which many of our members, including W. R. Frazer, H. D. McKinney, Mr. Roth, F. A. Elshoff and many others participated.

In response to these questions, Mr. Chapman brought out many additional practical pointers. For example, we were told his company felt it was safer to buy their welding rods already coated than to try coating rods themselves. If coated rods were used it would be possible to use either A.C. or D.C. current. Butt welds were more satisfactory if made all the way through from the one side. When making two-side welds it was more advantageous to clean each layer with a wire brush or chisel before placing on the next layer.

In general it is desirable to keep the grain size small. However, in a welded casting or structure the grain size is not so vital, because in the annealing at about 1200° per hour per inch cross section, the crystal structure is refined.

NOTRE DAME OPENS SEASON

Discusses Manufacture and Uses of Copper Clad Steel Wire

By William F. Lewis

The first meeting of Notre Dame Group was called to order on Nov. 3 by the chairman, Mr. Hughes. The following appointments were then made: Grenville King, program chairman; Henry McManus, membership chairman; John Dobinsky, refreshment chairman.

The speaker was Grenville King, who chose as his topic "Copper Clad Steel Wire." He showed the various types of baths and furnaces used, and the results obtained from each. He explained that the reason for making such wire, was that a wire was desired that had the strength of steel and the conductivity of copper.

CROWDS GATHER AT SHOW AND SESSIONS

1933 Convention Voted One of Most Successful in Years

Attendance records of several year's standing were broken by the fifteenth annual National Metal Congress and Exposition, in session in Detroit from Oct. 2-6, 1933. No less than 4789 registered in attendance at the technical sessions of the various societies, and the total attendance at the Exposition was more than 57,500.

Those thousands got their money's worth, too, for the show itself was a full 40% larger than in 1932, and the technical sessions were at the very least, second to none. Many, indeed, considered the 1933 papers as a group to be the most valuable to them of any year's program.

Cooperating this year with the A.S.S.T. were the American Welding Society, the Iron and Steel and Institute of Metals divisions of A.I.M.E., the Wire Association and the A.S.M.E. All had arranged most interesting programs.

One of the featured events of the week was the schedule of inspection trips to 20 of the most interesting plants in Detroit. Nearly a thousand took advantage of the proffered hospitality of these plants and made the trips in the comfortable busses provided.

The ladies likewise reported good times on the several trips arranged for their entertainment. One they liked especially well was a visit to the es-sembly line where Plymouth cars are made. Another that pleased was a luncheon at Dearborn Inn followed by a trip through Henry Ford's early American village.

The consensus of those who attended the Congress and Exposition was that they were glad not to have missed the metal industry's outstanding educational event of the past several years.

ASSIGNS VALUE TO SCIENCE TRAINING

J. H. Parker at Philadelphia Praises the Scientific Mind

By A. O. Schaefer

The introductory chapter of a new idea in programs was ably given by J. Heber Parker, vice-president of Carpenter Steel Co., at the Sept. 29 meeting of the Philadelphia chapter. Mr. Parker addressed the gathering on "The Value of a Metallurgical Education."

The speaker spoke rather of a scientific education, than of a metallurgical one. The fact that his illustrations were drawn from his own experiences, and from those of his fellow executives, made his talk extremely interesting to those present.

The ideal scientific education, he believes, should be liberal. Mathematics, English, and history should not be overlooked. Indeed the ability to use good English is extremely valuable to the engineer or technically trained man who may find that his training has led him into unexpected positions in the business world.

Physics and chemistry are the basic studies in a scientific education. The scientifically trained mind always looks for facts. It has, also, a well developed analytical angle.

The opportunity to become acquainted with scientific apparatus is one great advantage of a scientific course in a well equipped college.

Mr. Parker considered the above fundamental education should be supplemented in the individual with initiative and a knowledge of human relations.

The Entertainment Committee, under the leadership of George W. Keller, filled in the gap between dinner and meeting with an excellent movie of the Century of Progress Exposition. One of the latest exploits of Felix the Cat was also shown.

Philadelphia's first meeting is always held at Temple University with the idea of acquainting the members with the course in metallography and heat treatment offered there under the sponsorship of the chapter. This year Dean Dunham of the College of Liberal Arts, welcomed the A.S.S.T., and made them, as sponsors of a course, feel a part of the University.

THE REVIEW

Devoted to the interests of the American Society for Steel Treating

A Review of the Activities of the Chapters and National Organization

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NEW YORKERS HEAR
TALK ON STAINLESSMembers Ask Many Questions
of Speaker, Dr. Mitchell

By F. H. Clark

The first fall meeting of the New York chapter was held on Oct. 23 with a talk by Dr. W. M. Mitchell of U. S. Steel Corp. on "Technical and Economic Status of Stainless Steel."

Recent improvements have taken place in welding the hardenable stainless steels. Cutlery steel has been improved by high hardening temperatures although the cutting edge is not quite as efficient as the best grade of plain carbon steel. Machinability has been improved by selenium additions and carbide precipitation inhibited by titanium and columbium.

Dr. Mitchell mentioned many commercial applications such as the revolution which has taken place in nitric acid manufacture and production of fixed nitrogen which form the basis of explosives. Another interesting application will be the extensive use of stainless steel for masts, deck houses, hatches, smoke stacks, etc., for cruisers to be built under the new navy program.

In the discussion which followed, T. N. Holden requested a good cutlery stainless steel which Dr. Mitchell gave as 12-13% Cr, 0.35% C.

H. C. Bostwick of the Westinghouse Electric & Mfg. Co. asked for details of the stabilizing process. Dr. R. H. Aborn of the U. S. Steel Corp. explained that heating a stainless steel containing titanium to 1500-1600° F. will cause titanium carbides to form. This will prevent carbide precipitation later and allow successful welding.

A. B. Kinzel of the Union Carbide & Carbon Co. asked what was the prospect of reducing the cost of the final sheet in relation to the ingot price. In reply, Dr. Mitchell stated there were many expensive operations such as the prolonged heating of the ingot, the high polish of the finished sheet and such a high percentage of rejection that only 2½ tons of finished stock might come out of six tons of material at the start. In seamless tubing, a high cost factor is that each drawing must be followed by pickling and annealing.

L. S. Bergen of the Crucible Steel Co. asked how to determine Young's modulus accurately for stainless steel so as to check values supposed to be approximately 28,000,000. Mr. Bain replied that this was difficult as the value of the modulus increases with increasing reduction of area.

BAIN GIVES HARDENABILITY
TALK BEFORE COLUMBUS MEN

Chapter Season Opens Sept. 22

By R. E. Christin

Those of the Columbus chapter who were absent at the 1932 Convention felt quite fortunate in being given the opportunity to hear the Campbell Memorial Lecturer, Dr. E. C. Bain, metallurgist of U. S. Steel Corp. Research Laboratory, Kearny, N. J.

Dr. Bain's paper on the "Hardenability of Steel" was given in Columbus on Sept. 22, and opened the season for the Columbus chapter. The lecture was illustrated and was well received as indicated by the lively discussion which followed.

Those who participated in the discussion included: S. Epstein, O. E. Harder, J. L. Gregg, all of Battelle Institute; R. Frank of Bonney-Floyd Co., and others. The speaker's answers in the discussion were conclusive proof of his complete knowledge of the subject. Any chapter wanting a talk on a timely subject will be benefited by Dr. Bain's lecture.

This meeting was also a reunion with Dr. Bain's old associates at Ohio State University (Professor Withrow, et al.), from which school he graduated in 1915.

LISTS FACTORS WHICH AFFECT
USEFULNESS OF TOOL STEELS

A. J. Scheid Talks at Milwaukee

By W. E. Jominy

At the first meeting of the season for the Milwaukee chapter, A. J. Scheid of the Columbia Tool Steel Co. gave a talk on tool steel. This talk covered the main type of tool steel, and the effect of raw materials, mill practice, tool design and heat treatment on their properties.

Mr. Scheid classified tool steels into four types: High speed steel, high-carbon, high-chromium steel, non-shrinking steel, and carbon tool steel. He then presented the common variations in composition which might be found in each of these types.

Having outlined these compositions Mr. Scheid discussed the effect on the quality of finished tool steel of the following manufacturers' variables: Raw materials, melting practice, casting practice, forging practice, and annealing practice. The effect of customers' variables which included proper selection, tool design and heat treatment were presented last.

The subject was very well covered and provoked a discussion which lasted for more than an hour. One matter of interest which was brought out in the discussion was the effect of copper on high speed steel. Mr. Scheid stated that over 0.03 per cent of copper causes trouble in forging high speed steel.

The Milwaukee chapter is indebted to Mr. Scheid for this most interesting presentation of the subject.

YORK HAS TALK ON
TORSIONAL IMPACTF. R. Palmer Speaks at Oct. 11
Meeting in Waynesboro

By G. J. O'Neill and F. J. Allen

York chapter held its October meeting in Waynesboro, Pa., on Oct. 11. As usual, Waynesboro displayed its interest in the chapter's activity by the large attendance and the co-operation of the Manufacturers' Association.

The chapter and its guests again enjoyed hearing Mr. Frank R. Palmer, assistant to the president of Carpenter Steel Co., talk about "Torsional Impact Testing of Hardened Tool Steels." Chairman Wm. F. Allen of the Molybdenum Corp., of York presided at the meeting.

Mr. Palmer brought to his audience first hand information upon the new method of determining the toughness of steel, describing the lack of knowledge existing previously, the crude methods of such attempts at determination and the developments and principles that led to the adoption of the torsional impact method.

From many tests of high carbon tool steel he showed the effect of furnace atmosphere at hardening temperatures and the surprising phenomena that drawing at 350° F. for one hour seems to produce the highest toughness values.

Mr. Palmer's talk was very much appreciated by the chapter.

Following the lecture a visit was made to the Wayne Laboratories at invitation of member John Shank, who demonstrated the recently installed Baldwin-Southward physical testing machine, pulling and rupturing a number of samples for his audience.

On the committee in charge of the interesting arrangements and instructive lecture were James G. Morrison, chairman, metallurgist, Landis Machine Co., Waynesboro; John J. Shank, director, Wayne Laboratories, Waynesboro; T. B. Wood, T. B. Woods Sons' Co., Chambersburg; John Knapp, secretary, Manufacturers' Association of Waynesboro. They also provided the Albe-marle Pippin apples always enjoyed by the members, with many of which our vice-chairman Scotty Allen filled his pockets.

MEETING OF BOARD

(Continued from Page One)

ler, Detroit, October 3, at 9:30 o'clock a.m., pursuant to a motion of adjournment passed at a special meeting of the Board of Directors held at Hotel Statler, Detroit, Michigan, on October 1, 1933. All members were present.

The Constitution and By-Laws Committee of the Society was also present, consisting of the following members:

S. C. Spalding, Chairman
Robert Atkinson
H. D. McKinney (ex-officio)
Harold Stein
L. L. Wyman
John Wyzalek

Mr. Thomas H. Jones of the firm of Tolles, Hogsett & Ginn, Cleveland, Ohio, counsel for the Society, was also present.

President Coleman stated that the purpose of the meeting was to have the Board and the Constitution and By-Laws Committee discuss in detail the proposed changes in the Constitution of the Society. The new Constitution was read paragraph by paragraph and the changes were carefully scrutinized. After the Constitution had been thoroughly discussed, the Constitution and By-Laws Committee withdrew with Mr. Jones to give further consideration to the new Constitution.

During the absence of the Committee and Mr. Jones, the Board of Directors continued in session. The Chairman announced the receipt of a letter from Mr. Fred Llewellyn resigning as a member of the Recommended Practice Committee. Upon motion duly made, seconded and unanimously carried, it was

RESOLVED that the resignation of Mr. Fred Llewellyn as a member of the Recommended Practice Committee be accepted and that the Board express its sincere appreciation of Mr. Llewellyn's splendid service.

President Coleman then reported the receipt of the following communication from Mr. A. B. Kinzel, Chairman of the Publication Committee of the Society:

"October 2, 1933—TO THE PRESIDENT, A.S.T.

"Overlapping of subject matter covered by various societies in the field of metallurgy has reached a stage where it is more than burdensome to the membership of the societies, specifically our own society, the A.S.T. The matter has been discussed informally and it has been suggested that a committee be formed to investigate the situation and make such recommendations to the Board of Directors as they see fit. The greatest duplication of subject matter is found in the A.I.M.E., Iron & Steel Division, and the A.S.T. The Iron and Steel Division of the A.I.M.E. has acted on this suggestion by appointing a committee to review the situation. It is the recommendation of the Publication Committee of the A.S.T. to the Board of Directors that a committee be formed to review the situation from our point of view and to meet with the A.I.M.E. committee, said committee to report directly to the Board of Directors and not empowered to take action.

A. B. KINZEL, CHAIRMAN"

After discussion, upon motion duly made, seconded and unanimously carried, it was

RESOLVED that the President of the Society appoint a Committee to meet with the Committee of the American Institute of Mining and Metallurgical Engineers to discuss the subject matter contained in Mr. A. B. Kinzel's communication of October 2, 1933, and subsequently to report its findings to the Board of Directors of American Society for Steel Treating.

President Coleman then appointed the following Committee to meet with the Committee of the American Institute of Mining and Metallurgical Engineers: George Norris, R. S. Archer and W. H. Eisenman.

President Coleman then stated that the next order of business was to discuss the name of the Society. After serious consideration and discussion, it was moved by Mr. d'Arcambal, seconded by Mr. Keshian, and unanimously carried that the Board of Directors, after having taken into consideration all of the new names suggested by the members of the Society, approved the submission of two names: (1) AMERICAN SOCIETY FOR METALS, and (2) AMERICAN METALLURGICAL SOCIETY, to a vote of the membership and that the name AMERICAN SOCIETY FOR METALS should be unanimously recommended to the membership for adoption for the following reasons:

1. That a survey of the Society indicated an overwhelming desire that the name of the Society should be changed so as to more adequately portray its present activities.

2. The board recommends the name, AMERICAN SOCIETY FOR METALS, for adoption because it provides that the first three words of the present name, "American Society for" be retained and it substitutes the word "Metals" for "Steel Treating," giving the Society the benefit of a name simi-

lar in style and number of words to its present euphonious but misleading title.

3. The name, AMERICAN SOCIETY FOR METALS, adequately portrays the present scope of the Society as well as its aims and purposes.

4. Furthermore, the name AMERICAN SOCIETY FOR METALS is similar in construction to the names of other technical societies, such as "American Society of Mechanical Engineers," "American Society of Electrical Engineers."

5. That the name AMERICAN SOCIETY FOR METALS will facilitate securing new members for the Society because the name more adequately portrays the field covered by the Society and the name does not restrict the thoughts of those eligible for membership to any single phase of the metal industry.

6. The name AMERICAN SOCIETY FOR METALS will facilitate securing advertising and participation in the Exposition from advertising men and sales executives because the name is completely descriptive of the activities and interests of all the members of the Society.

7. While many plant employees are familiar with the present activities and subject materials covered by the Society, nevertheless many executives of the production, advertising, and sales departments of a firm producing, fabricating or using metals judge the desirability of their firm's participation in the activities of the Society by its present name, "Steel Treating." This restricting influence of major importance will be overcome because the name recommended, AMERICAN SOCIETY FOR METALS, will immediately and adequately portray to individuals not familiar with the work of the Society that the present interests and work of the members are in the all-embracing field of metals. Consequently, the activities of the Society will appeal to these manufacturing executives as deserving of their support.

The President then submitted the report of the Final Award Committee finding the paper of J. V. Emmons of Cleveland, Ohio, published in *Transactions* and entitled "Some Physical Properties of High Speed Steel" to be of the highest merit of any paper published in *Transactions* during the year and awarding the Henry Marion Howe medal and certificate to Mr. Emmons.

Upon motion by Mr. Eisenman, seconded by Mr. Phillips and unanimously carried, the report of the Final Award Committee was approved.

The Constitution and By-Laws Committee and Mr. Jones then returned to the meeting and submitted their report including certain additional changes to the Constitution set forth in the galley proofs previously submitted to the Board.

The Committee first recommended that the number of members of the Board should be increased from nine members to eleven members. Upon motion by Mr. Pascoe, seconded by Mr. McKinney, the recommended increase in the number of members of the Board was rejected by a vote of five to three.

The Committee then recommended that the President should designate seven chapters to nominate individuals for the nominating committee in lieu of having various chapters select individuals for consideration by the President as provided in the proposed Constitution. Upon motion by Mr. d'Arcambal, seconded by Mr. Clamage, the recommended change in the method of naming the nominating committee was unanimously rejected.

There were no further changes recommended by the Constitution and By-Laws Committee and upon motion by Mr. d'Arcambal, seconded by Mr. Clamage, and unanimously carried, it was

RESOLVED that the Board of Directors hereby proposes amendments to the Constitution of the American Society for Steel Treating whereby the entire present Constitution will be repealed and in lieu thereof a new Constitution will be adopted, copy of which new Constitution has been initiated by the Secretary of this meeting and follows the minutes of this meeting.

Upon motion by Mr. Eisenman, seconded by Mr. Clamage and unanimously carried, it was

FURTHER RESOLVED that the Board of Directors hereby calls a special meeting of the members of the Society to be held at 10 o'clock a.m. on December 20, 1933, at Cleveland, Ohio, for the purpose of: (1) voting upon the amendments to the Constitution of the Society, and (2) voting upon an amendment to the Articles of Incorporation of the Society changing the name of the Society.

A general discussion followed and it was pointed out that the meeting would be attended by the members of the Society in person or by proxy and that the written proxy should permit a separate vote on the proposed amendments to the Constitution and the amendment to the Articles changing the name of the Society; furthermore that the written proxy should name Coleman, Phillips and Eisenman to act as proxies.

Upon motion duly made, seconded and unanimously carried the meeting adjourned.

DETROIT MEETS IN
ANN ARBOR OCT. 7See Football Game and Hear
Two Transportation Papers

By Scott C. Taylor

Following the usual custom, the first meeting of the new Detroit season was held at Ann Arbor, Oct. 7. After watching the University of Michigan and Michigan State football teams battle through a drizzling rain, we all did justice to a bang-up steak dinner served in the Michigan Union.

The first speaker of the evening was Prof. George C. Brown, whose subject was "Motor Fuel Characteristics as Related to Engine Performance." Prof. Brown showed how the volatility of motor fuel affected starting and told how the fuel must get into the combustion chamber in the proper form to give combustion, and must continue to be supplied to the cylinders in a condition to cause combustion.

Distillation curves of fuels from 1900 to the present indicated how greatly the characteristics of fuel have changed and brought out the important fact that the engine designer and the fuel manufacturer must get together so that either engines will be designed to burn the fuel available or the fuel can be changed to fit the needs of the engine.

The second speaker was Prof. John S. Worley, whose subject was "Early History of Transportation." Prof. Worley made us realize that the building of roads and bridges and means of transportation were not new, and that centuries ago people were able to build roads and bridges that are still in good condition. Slides were shown which included automobiles that were foot propelled, those moved by windmill and pushing devices. One slide which created considerable interest was a reproduction of a worm and gear built during the time of Maximilian.

The consensus of the chapter was that this was one of the most enjoyable meetings we had attended.

OUTLINES CHROMIUM
USES TO MONTREALChapter Institutes Reporting
Service at Meetings

By Gordon Sproule

The first meeting of the Montreal season was held at the Windsor Hotel. After the usual dinner, about 75 members and guests assembled to hear Stanley M. Norwood, of Electro Metallurgical Co., New York, tell about the "Use of Chromium in Steel Castings and Forgings."

Many of the audience were surprised to learn how many different ranges of chromium content had been found useful and had been more or less standardized. Mr. Norwood's lecture included many figures read from notes, and tables of data were thrown on the screen.

Members of the chapter will receive a mimeographed copy of the lecture and of the discussion recorded by a stenographer. This service has been instituted by our generous sustaining members, at the suggestion of Robert W. Bartram Co., Ltd.

The speaker said rail steel containing about 3% Cr has proved very satisfactory. It has a hardness of 375 Br., as compared with 200 to 300 Br. for ordinary medium and hard rails. It is said to be weldable, curvable, to have ample conductivity; the cost might be \$10.00 per ton extra.

Corrosion resistance becomes marked with contents of 4 to 6% Cr, especially with small additions of molybdenum or tungsten for special cases. The addition of silicon helps resist oxidation at high temperatures. These grades should contain carbon below 0.10%, as corrosion resistance depends on dissolved chromium and the absence of precipitated carbides. Also, with a carbon content as high as 0.10% they are air hardening.

The high chromium irons and steels containing about 14% Cr, and the super-stainless 18-8 alloys are so well known that the speaker did not attempt to deal with them at all fully. Mr. Norwood warned his listeners that steels containing 25% Cr or over were liable to temper brittleness, as occurs in Ni-Cr steels; this could be avoided by suitable heat treatment, namely, by tempering at red heat and cooling quickly through the range 400 to 500° C. He also described the use of chromium up to 12% in cast irons, and even in malleable cast iron; important examples of these are "Niresist" and "Ni-hard," and newer compositions containing no nickel.

The vote of thanks was proposed by our chairman, Dr. Alfred Stansfield.

NORTHWEST ENJOYS VISIT TO PLANT AT PREMIERE MEETING

Minneapolis-Honeywell is Host
By T. P. Hughes

The Northwest chapter opened its program of activities and offerings to its members for the current year with a visit to the spacious plant of the Minneapolis-Honeywell Co., manufacturers of automatic industrial and domestic temperature control and air conditioning equipment.

At 6:30 the members partook of an unusually good steak dinner served in the plant dining room. After a few

words of greeting given by Mr. Foster, the production manager, the group was broken up into small units and taken through the various departments where the processes and procedures were fully explained by competent guides.

The visit gave the members an opportunity to observe some of the problems associated with the production and assembling of small machine parts as well as the manufacture of instruments requiring high accuracy and precision under normal plant conditions of changing temperature, dust and harmful gases, etc. The plant is working to its full capacity, and all departments were operating.

The members heartily approved of the visit as arranged by the executive committee and its chairman, Mr. Anderson.

PURDUE WELDING MEETING Two-Day Conference Opens Dec. 7

Purdue University announces its ninth annual Conference on Welding to be held at Lafayette, Indiana, on December 7-8. This conference will be held under the direction of the Engineering Extension Department and the Department of Practical Mechanics, with the manufacturers of welding equipment co-operating. The conference will include talks, exhibits and demonstrations, and is open to all manufacturers and welding shop operators of Indiana and neighboring states.

All who are interested should address inquiries to Engineering Extension Department, Purdue University, Lafayette, Indiana.

YORK CHAPTER SPONSORS FINE EVENING METALLURGY COURSE

John C. Bennett is Instructor

The York chapter this season will sponsor the extension course in metallurgy of the Pennsylvania State College, Department of Engineering. The course will be taught as a part of the York Y. M. C. A. night school.

John C. Bennett, a member of the chapter and metallurgist of the York Ice Machinery Corp., has been appointed instructor on the recommendation of the York chapter and with the approval of Penn State College.

The chapter, through its educational

committee, of which H. G. Hoch is chairman, is planning to take a very active part in the arrangement and promotion of the course. Their services will be at the command of the instructor to assist in making the class of real value to the students.

The course, for which college credits will be awarded successful students, is planned for practical machinists, tool makers, heat treaters, designers, engineers, purchasing agents, salesmen or anyone interested.

Solicitation has begun among local industries for the necessary apparatus to equip a laboratory for the course. The York Ice Machinery Corp. has offered the use of its laboratory in this connection.

Further details may be obtained from the chapter secretary.

ASK FOR THESE FREE PAMPHLETS

"Split-Degree" Control

Bristol Co. describes its new pyrometer controller in a bulletin explaining the unique advantages which make possible "degree-splitting" control up to 3000° F. and result in fewer rejects, greater output and longer furnace or oven life. Bulletin Oc-56.

Castings to Resist Heat

Ohio Steel Foundry Co. offers an elaborate booklet which covers the production of Fahrite heat resisting alloy castings, illustrating their many uses and giving comprehensive metallurgical data. An interesting section describes their modern plant and equipment. Bulletin Oc-41.

Aerocase Hardening

The Aerocase method of hardening steel in a liquid bath is described in detail in a recent publication of American Cyanamid & Chemical Corp. Full data on the process and its cost, together with a discussion of the metallurgy involved, are presented. Bulletin Oc-28.

Continuous Carburizing

Furnaces for continuous gas carburizing by the Eutectrol process are described in a new folder by Surface Combustion Corp. Photographs of installations and performance data are used to show the advantages of the process. Bulletin Oc-51.

Water Treating

Dearborn Chemical Co. has prepared a booklet describing the operation of their lines of water treating units and testing equipment. Photographs and drawings illustrate the equipment and the text describes the manner of operation. Bulletin No-37.

Quenching Handbook

E. F. Houghton & Co. have published an excellent 80-page handbook on the subject of quenching. More than 30 charts and photomicrographs help tell the story. A copy will be sent free to those who request it. Bulletin JI-38.

New Heat Controller

"Straight Line Control" of furnace temperature is possible with the Trendalizer Controller made by Brown Instrument Co. There is no zig-zagging across the control point, because this unique device changes its control action in accordance with both temperature trend and extent of deviation. Bulletin Sp-3.

Sheffield Steel

Wm. Jessop & Sons, Inc., in a recent publication explain why their Sheffield Superior oil hardening steel does not distort and is easily machined. They assign as reasons a special anneal and a proper balancing of the carbon, manganese and tungsten contents. Full details are presented in Bulletin Jn-61.

Hardness Testing

Everyone interested in the testing of metals for hardness will do well to have on hand a copy of a catalog recently issued by Wilson Mechanical Instrument Co., illustrating and describing the latest design of Rockwell Hardness Testers and auxiliary work supports. Bulletin Sp-22.

Aluminum vs. Corrosion

In the carefully prepared booklet, "Combating Chemical Corrosion with Alcoa Aluminum," published by Aluminum Co. of America, effects of various corrosive agents upon aluminum and its alloys are described in detail. It is an excellent and convenient source of information on this subject. Bulletin Sp-54.

Nitriding Facts

Information on possible new applications of Nitralloy and the nitriding process in view of recent developments may be obtained from Ludlum Steel Co. New economies in production and a better product may now be obtained. Bulletin Jn-94.

New Zinc Coating

Wire which has been zinc coated by the new Bethanizing process is described in Bethlehem Steel Co.'s latest folder. This process produces a zinc coating which has proved to be more ductile, tighter, tougher, more uniform and purer. Coatings 3 times as heavy as formerly can be made. Bulletin Au-76.

Optics in Metallurgy

A surprisingly large number of uses for optical instruments in metal working are described in a new booklet of Bausch & Lomb Optical Co. Photomicrography is, of course, prominent among these, but this well illustrated booklet shows many other interesting optical instruments. Bulletin No-35.

Big-End-Up

Gathmann Engineering Co. briefly explains the advantages of steel cast in big-end-up ingots, showing the freedom from pipe, excessive segregation and axial porosity. An 82% ingot-to-bloom yield of sound steel is the usual practice. Bulletin Fe-13.

Bright Annealing

A publication of Electric Furnace Co. describes new developments in controlled atmosphere furnaces for continuous deoxidize annealing, bright normalizing and bright annealing both ferrous and non-ferrous metals. Sheets, strip, coils, tubing and wire come clean, bright and dry from these furnaces. Bulletin No-30.

Cast Vanadium Steel

Jerome Strauss and George L. Norris have written a technical booklet for Vanadium Corp. of America describing the properties developed by steel castings containing various percentages of vanadium. The information given is complete and authoritative. Bulletin S-27.

Electric Furnaces

Full details of the line of electric furnaces made by Hoskins Mfg. Co. are well presented in their latest 42-page catalog. Contents include description and data on 17 types of furnaces and some valuable information on Chromel resistance wires and thermocouples. Bulletin Sp-24.

X-Rays in Industry

General Electric X-Ray Corp. has available a profusely illustrated brochure entitled "Industrial Application of the X-Ray," which gives the complete story of the field of application of this modern inspection tool. Valuable information is presented. Bulletin Ma-6.

High Cr Cast Iron

A pamphlet describing foundry production of cast irons containing from 15 to 30% of chromium has been issued by Electro Metallurgical Co. These cast irons do not grow or scale after repeated heatings and are excellent for high temperature work. Bulletin Ma-16.

Hardening High Speed

Spoilage is eliminated when high speed steel is hardened in Certain Curtin electric furnaces, claims a new booklet issued by C. I. Hayes, Inc. Grain growth is controlled and the most delicate tools develop maximum hardness without decarburization, scaling or fusing. Bulletin No-15.

Uses of Molybdenum

Climax Molybdenum Co. offers a new and useful 50-page booklet dealing with the benefits conferred by molybdenum as an alloying element in iron and steel. In orderly fashion engineering data are presented and made clear with numerous tables and illustrations. Bulletin Au-4.

New Type Furnace

A new bell-type retort furnace made by American Gas Furnace Co. can be used in quick succession for carburizing, nitriding, bright annealing in gas atmospheres, or for hardening, normalizing, tempering or annealing. It is an ideal heat treating tool where production is widely varied in character. Bulletin Jn-11.

Roll Grinding

Carborundum Co. has just published a 50-page booklet on roll grinding which may be considered a handbook of available information on this subject. Carefully written and amply illustrated, this treatise will undoubtedly be of real practical value. Bulletin Au-57.

Globar Elements

Globar electrical heating units and a variety of accessories for their operation have been catalogued by Globar Corp. A list of the standard industrial type heating elements and a coordinated list of terminal mountings and accessories is included. Bulletin N-25.

Cyanide Baths

Much practical information on the heat treatment of steels with cyanides and salts is contained in a descriptive booklet of E. I. duPont de Nemours & Co., R. & H. Chemicals Dept. The booklet contains many valuable suggestions for improved quality heat treating. Bulletin Sp-29.

New Furnace Blowers

Two new types of Turbo-Compressors are described in recent publications of Spencer Turbine Co. Uses for the 1/2 hp. Turbo are presented, as is a description of the new single stage Turbo-Compressor which affords tremendous economies in low pressure gas and oil fired equipment. Bulletin Sp-70.

Heat Resisting Alloys

Authoritative information on alloy castings, especially the chromium-nickel and straight chromium alloys manufactured by General Alloys Co. to resist corrosion and high temperatures, is contained in one of that company's publications. Bulletin D-17.

How to Work Stainless

A very handy booklet on stainless steel is offered by Carpenter Steel Co. It has been compiled for quick reference and contains accurate working data on all forms and types of stainless which should be extremely helpful in working out manufacturing problems. Bulletin Oc-12.

Stainless Sheets

A very useful booklet describing the stainless steel sheets and light plates made by American Sheet & Tin Plate Co. gives recommendations for fabrication and a description of finishes and analyses available. Bulletin Ap-96.

Quicker Heat Treating

Driver-Harris Co. discusses Nichrome sheet containers for heat treating in an illustrated folder which honestly states that while for certain purposes sheet containers cannot be used economically, there are a multitude of installations where their advantages of lightness and quicker heating can be fully utilized. Bulletin JI-19.

Darkfield Microscopy

Comparison is made of darkfield and brightfield metallographic examination in a 16-page publication of E. Leitz, Inc. The equipment necessary for darkfield microscopy is described and prices are given. Several sets of micrographs of the same field contrast the two methods of illumination. Bulletin Ja-47.

Scleroscopes

The model D standard recording scleroscope is described and illustrated in a recent publication of Shore Instrument Co. The theory and practice of hardness testing with this portable machine as described in this bulletin reveal a fund of valuable facts. Bulletin S-33.

New Chromium Steel

A new Enduro has just been developed by Republic Steel Corp. — Enduro 4-6% Chromium, which is a fine heat resisting alloy. A new handbook gives full information which will be appreciated by designing and research engineers, metallurgists and metal plant executives. Bulletin No-8.

Maintenance Welding

This interesting booklet describes the use of the oxyacetylene process in the reclamation of broken and worn machine parts, alteration, fabrication and installation of equipment. Such equipment as piping, tanks, machine elements, engine and pump parts and conveying systems is covered in the 16-page illustrated booklet of Linde Air Products Co. Bulletin JI-63.

To Prevent Rust

The well known rust preventive, No-Ox-Id, is now available from Dearborn Chemical Co. as a foundation for paint. It is available in the colors red, gray or black. A booklet explains how maximum resistance to corrosion can be obtained. Bulletin Ju-36.

New Foxboro Pyrometer

Foxboro Co. describes the new Foxboro potentiometer recording pyrometer in a recent bulletin. The outstanding features are a new design of balancing mechanism, ability to make from one to six records, a 12-in. chart, rapid recording cycle and a moisture-proof case. Bulletin Au-21.

New Hardening Method

All three vital factors in correct hardening are completely controlled by the new Vapocarb Humm method of hardening, which is well described in a Leeds & Northrup bulletin. The three factors are: Quench point, rate of heating, and furnace atmosphere. Complete details are given in Bulletin No-46.

Beryllium-Copper

Beryllium-Copper is a relatively new alloy produced by American Brass Co. which can be heat treated to tensiles as high as 181,000 lb. per sq. in. It is supplied in sheets, wire, rods, tubes and forgings. An excellent booklet gives full information on fabrication and treating. Bulletin No-89.

X-Rayed Alloy Castings

A folder just issued by Electro Alloys Co. describes their X-Ray inspection service of Thermalloy heat resisting castings for high temperature work. Considerable data on the use of X-Ray tubes and "radon" capsules to check foundry practice are presented. Typical radiographs and tables of physical properties are included. Bulletin Oc-32.

Titanium Cast Iron

The effects of titanium on the structure and properties of gray cast iron, especially as contrasted with those of other commonly used alloys, are described in a pamphlet offered by Titanium Alloy Mfg. Co. The results given were obtained by regular operating practice in several foundries and not solely by laboratory experiments. Bulletin JI-90.

"Vee-less" Arc Welds

New literature covering a very recent development in arc welding has been prepared by Metal & Thermit Corp. Known as Murex Straight Gap welding, the new process eliminates grooving or "veeing" the edges even of heavy plates. Welding time is halved and other savings are effected, it is claimed. Bulletin My-64.

Electric Pot Furnace

American Electric Furnace Co. has just published a new 4-page folder showing the construction features and giving the operating advantages of their "American" electric pot furnace as used for lead, salt and cyanide baths. Bulletin Oc-2.

Pickling Inhibitors

A pamphlet describing the nature and use of Grasselli Inhibitors is available to all those interested in the pickling of steel. It not only describes the merits of these inhibitors, but it gives a table of suggested inhibitor strengths to be used in the pickling of the various grades of steel. Bulletin Ap-95.

Choosing Nickel Steel

International Nickel Co. has an ingenious chart to show at a glance the nickel alloy steel compositions and treatments needed to develop yield points in section sizes from 1 to 12 in. It is useful in selecting bars, shafting and forgings of simple shape. Bulletin Au-45.

American Society for Steel Treating,
7016 Euclid Ave., Cleveland.

Please have sent to me the following literature as described in the November issue. (Please order by number.)

Name
Position
Firm
Address

DESCRIBES STEEL MAKING IN FRANCE

A. L. Feild Gives Interesting Account of Recent Travels

By Stanley P. Watkins

Baltimore's first meeting of the year was held Oct. 16, at the Engineers' Club. Chairman H. C. Ballard made a short speech of welcome in which he briefly outlined the aims of the chapter for the coming year. The principal speaker of the evening was A. L. Feild, who gave a very interesting talk on his impression of the iron and steel industry in France. Mr. Feild recently returned from France, having spent five months there in connection with metallurgical problems.

Mr. Feild's first impression was that the iron and steel industry was very well off despite the depression, and attributed this to the fact that the industry was controlled by very old companies that have relied upon profits for expanding their activities. The equipment of the plants he visited were modern, but stated the average French laborer was not nearly so efficient as the American laborer. Most of the large companies have adequate research facilities and maintain large staffs. The important positions are filled by technically trained men.

Most of the companies are equipped to manufacture implements of war, which is largely done on presses, as pressing seems to be preferred to forging.

Mr. Feild stated that duplexing was practiced quite extensively in France, as their main difficulty was high phosphorus raw materials. The Bessemer process is used to a greater extent than in America. The average Frenchman, Mr. Feild said, was very well satisfied with his country just as it is, and is very slow to make any radical changes; for this reason the steel industry is about five years behind the times, especially in the field of special alloy irons and steels.

G. M. Nauss, our delegate to the Convention at Detroit, reported that it was very well attended, and that the number of exhibitors was considerably larger than last year. The members of the Group were very glad to hear from Mr. Nauss that we had served our probationary period and would be granted a charter upon formal application to the National Secretary.

The Group was pleased to learn of the honor accorded our first chairman, Emil Gathmann, by his nomination as Treasurer of the Society.

JOHN C. HENDERSON DIED SEPT. 25

John Clifton Henderson, inventor of cast "Nichrome," died in the Elizabeth General Hospital, September 25. He was 56 years old and resided at 471 Madison Avenue, Elizabeth, having moved there from New York six years ago. He was a native of Washington.

Mr. Henderson held thirty or more patents and for the last twenty years has been consulting engineer at the Driver-Harris Co., Harrison, N. J. His patent on cast carburizing containers made of the alloy "Nichrome" was taken out about twenty years ago.

COLUMBUS MEN DISCUSS TALK ON TOOL STEEL MANUFACTURE

October Speaker is A. J. Scheid
By R. E. Christin

The October meeting of the Columbus chapter was a treat to the members, as it was held ten miles out, at the Central Hotel, Worthington.

It was not unlike a family dinner, as the fried chicken and "trimmings" were placed on the table for all to reach. About 35 members and a few guests were present to hear the principal speaker, A. J. Scheid, metallurgist, Columbia Tool Steel Company, Chicago Heights, whose illustrated talk on "Tool Steels" was very well received.

A report of Mr. Scheid's talk before another chapter appears elsewhere in this issue. The fact that the speaker designated 0.05% of an alloy a contamination was made a topic of discussion by Dr. Gillette of Battelle Institute. Mr. Scheid believes that any alloy not intended nor found in the majority of heats, is a contamination and contributes to abnormality. Melting practice was emphasized. Other members who discussed the talk were, S. Epstein, O. E. Harder, J. L. Gregg, R. E. Christin, G. N. Moffat.

The reports of the delegates to the Detroit Convention were also made. Geo. N. Moffat gave the results of the election of National Officers and other details of the meeting, while R. E. Christin, Columbus Bolt Works Co., summarized his observations of the technical sessions and exhibition.

DESCRIBES MAKING OF OPEN HEARTH AND ELECTRIC STEEL

A. D. Shankland Talks at Buffalo
By F. L. Weaver

The opening meeting of Buffalo's 1933-1934 season was well attended. Chairman Clyde Llewellyn, after dinner, introduced G. F. Roeder, who spoke briefly on the coming chapter golf party.

Then Ernest Starkweather, chairman of the membership committee, spoke for a few minutes on the membership-building program for this year.

Mr. Llewellyn then introduced the evening's technical chairman, Herbert J. Cutler, who very graciously made welcome the speaker of the evening, A. D. Shankland, superintendent of the Lehigh plant of Bethlehem Steel Corp.

Mr. Shankland described the various methods of producing open hearth and electric steel, and imparted much information about fuels, limestone, ferro-alloys, condition of the ingot mold and teeming temperature. He also discussed the possibility of producing certain alloy steels more profitably in the basic open hearth than in the electric furnaces, yet with the retention of the usual electric quality.

An enthusiastic discussion followed Mr. Shankland's talk.

R. B. SCHENCK IN NEW CONNECTION

Robert B. Schenck, "Bob" to his legion of friends, is now associated in the metallurgical sales department of the Pittsburgh Crucible Steel Company. Bob began his new duties October 1 and is connected with the Detroit office, located in 5-230 General Motors Building.

CINCINNATI HEARS TOOL STEEL TALK

A. J. Scheid Replies to Many Questions after Speaking

By N. C. Strohmenger

At the regular Cincinnati chapter, held Oct. 12, we had A. J. Scheid, metallurgist, Columbia Tool Steel Co., Chicago, as speaker on the subject of "Factors Affecting Tool Steel Performances."

We had an unusually helpful discussion which covered the following questions and answers:

Q—What was the practice used in checking the impact of carbon tool steel?

A—It is usually done in an Izod machine by heating a notched heat treated bar with a swinging hammer and the foot pounds required to break piece are measured by the machine.

Q—How does mass effect prevent hardening?

A—On very large pieces it is difficult to get hardness that is not file soft all over or in spots.

Q—Does a reamer made of 18-4-1 high speed steel decarburize and result in softness when properly heat treated?

A—No. Sometimes cobalt added by mistake will give trouble which sometimes gets into the scrap being melted by mistake.

Q—Would molybdenum cause decarburizing or softness in this same 18-4-1 high speed steel?

A—No.

Q—What are the effects of titanium in the high speed steel?

A—It usually adds some toughness and acts like vanadium in controlling the depth of hardness.

Q—Will a high speed steel with cobalt increase in hardness if drawn considerably longer than the usual time at 900 deg. F.?

A—Yes, it is possible to happen at a higher or lower temperature due to the peculiar effect of age hardening.

Q—Is there much attention paid to drawing in the blue brittle range on high speed steel?

A—No, since most high speed steels are drawn above the blue brittle range, as they are not much good otherwise.

Q—What is the best draw for a fragile piece of high speed steel requiring maximum toughness?

A—On 18-4-1 steel, the draw at 900 deg. F. seems to give maximum torsion and impact strength.

LIGHT IS SUBJECT OF CANTON MEETING

Chapter Learns About Several Unusual Types of Light

By H. J. Deal

The Canton-Massillon chapter held their October meeting at the Onesta Hotel on the 26th. Approximately 25 members were present for dinner and about 60 for the meeting.

Carl E. Egeler of the Nela Park Engineering Department, General Electric Co., Cleveland, gave a very interesting talk on "Recent Developments in Lamp and Ultra-violet Sources."

Starting with the Edison type light bulb he traced its development to date. He demonstrated a new double filament lamp which will yield either 150, 200 or 350 watts for stores and other similar applications.

The aluminum foil flash lamp was explained, and the associated problems of controlling the camera shutter to meet the maximum intensity of the light. This intensity is equivalent to 200 lights of 200 watts each. The foil used in the lamp is 0.00002-inch thick. Several samples were floated around the room.

The new sodium lamp proved to be quite interesting. It was learned that where the tungsten filament lamp has an efficiency rating of about 15%, the sodium lamp is about 85%. This soft yellow light will unquestionably have a place in industrial and highway lighting.

Mr. Egeler then demonstrated the various types of ultra-violet lamps and showed the fluorescent properties of various materials, such as vasoline, paints, ores, etc.

An interesting discussion followed his talk, most of it being directed toward the ultra-violet rays and their ability to produce vitamin "D" in the human system. General Electric are not advocating the home or industrial use of ultra-violet rays at the present time, but considerable work and experiments are being conducted along these lines.

O. V. GREENE READS TORSION IMPACT PAPER BEFORE LEHIGH

Talk Arouses Much Discussion

Lehigh Valley chapter held a regular meeting on Nov. 3 in Markle Hall, Lafayette College, at Easton, Pa.

O. V. Greene, metallurgical engineer of Carpenter Steel Co., was speaker. He presented the paper "Torsion Impact Testing" which was prepared by G. V. Luerssen and himself and presented at the recent Detroit convention. Owing to illness, Mr. Luerssen was unfortunately unable to attend this meeting.

[This excellent paper was preprinted before the convention and copies may be obtained from A.S.S.T. headquarters. For this reason it will not be abstracted here—EDITOR.]

Mr. Greene's audience was highly interested, as was shown by the lively discussion which followed his talk. Half way through the discussion Chairman L. F. Witmer called the meeting to order and the members were free to discuss problems of their own outside the scope of the paper. This innovation was started this year in the chapter.

At the conclusion of the later resumed discussion of Mr. Greene's paper, he was voted hearty thanks.

ELECTRIC WIZARDRY AWES LOS ANGELES

Members Stage Chicago Fair Miracles at Chapter Meeting

By Charles F. Lewis

The October meeting of the Los Angeles chapter was held at the Chamber of Commerce dining room on Oct. 12, with about 110 members present.

"Professor" G. N. Hawley, industrial heating engineer for Southern California Edison Co., presented a series of spectacular electrical demonstrations that smacked of "Chandu the Magician."

Assisted by his "Associate Professors" S. L. Cipperly, industrial heating specialist, and G. M. Rankine, illuminating engineer, he brought forth and explained the electric eye, radiant energy, black light, the transmission of sound over a light beam, and many other electrical wave phenomena.

These were few of the exhibits that have been shown in the G. E. "House of Magic" and the Westinghouse "The Hall of Miracles" at the Chicago Fair.

Very graphically, "Prof." Hawley sketched the spectrum of electric wave phenomena from the long alternating current wave through the radio wave, infra-red, visual band, the ultra violet band, etc., to the most recently discovered, very short wave, cosmic wave.

Most weird colors and designs were brought out on his five-and ten-cent store collection of trinkets by the use of the infra-red ray, the so-called black light.

Fluorescence, luminescence, ammeters to measure one millionth of an ampere, the electric light bulb the size of a grain of wheat, were all duly sorted out and explained and if one may judge by the number of questions that were asked afterwards, we are forced to call this one of the best meetings in some moons.

E. H. KOTTNAUER APPOINTED

Edwin H. Kottnauer, Los Angeles, has been appointed by the Climax Molybdenum Co. as its representative for the Pacific Coast territory. The Climax office and warehouse are located at 1341 South Hope Street, Los Angeles, and are now under Mr. Kottnauer's supervision. Mr. Kottnauer is chairman of the Los Angeles chapter.

PHILADELPHIA HAS "CAST IRON" TALK

J. B. Greenstreet Settles Many Points Raised by Hearers

By Adolph O. Schaefer

One of the most eventful meeting nights in the history of the Philadelphia chapter was Friday, Oct. 27, 1933, when Julian B. Greenstreet of the Textile Machine Works told the story of Cast Iron, particularly gray cast iron.

In a very comprehensive talk, he first distinguished between the various kinds of cast iron, and then explained their manufacture. He further explained the various fields in which each material finds its usefulness, and the reasons for this.

Details were saved for the discussion following the paper, and the speaker's broad experience in the manufacture of cast iron was drawn upon to the limit in this part of the meeting. The speaker had a fundamental and practical knowledge of his subject which sufficed to answer all questions.

The points most frequently brought up in this discussion were the influence of various alloying elements, the replacement of the cupola by the electric furnace, and the possibilities of heat treatment of cast iron. Mr. Greenstreet could recall practical examples of every problem raised. He also expressed the need for scientific study of the subject.

Dinner preceding the technical meeting was addressed by Mr. George Munger, freshman football coach at the University of Pennsylvania. Mr. Munger spoke of the importance of having good officials in the modern game of football.

The meeting was remarkable for two events. One was the launching of the campaign for the Technical Service Committee. All of the Philadelphia chapters of technical societies have combined to create this committee. It was first formed a year ago, and served efficiently last year in scientifically searching for employment for unemployed technical men, and in assisting those in destitute circumstances. A much lower fund is asked for this year.

The other major event was the announcement that the chapter would have a smoker on Dec. 8. Omitted last year because of business conditions, everyone is glad to have this event restored to the program.

A. W. Sikes, recently chairman of Chicago chapter, has accepted a position in the Engineering Division, Federal Emergency Administration of Public Works, and will be located in Washington for several months.

STEEL RESEARCH

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GRADUATE METALLURGIST: 14 years' experience on steel problems connected with chemical and metallurgical investigations, research, production and plant management. Well recommended. Box 11-5.

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METALLURGIST: Experienced in steel foundry work and developing specifications for steels and non-ferrous alloys as well as research. Also controlled plant and general metallurgical operations. Last 8 years in selling tool and alloy steels. Box 11-15.

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LEHIGH'S OPENING MEETING IS DEVOTED TO CAST STEEL

A. C. Jones Gives Good Talk

By Gilbert E. Doan

A. C. Jones, research engineer for Lebanon Steel Foundry, was the speaker of the Sept. 15 meeting of the Lehigh Valley chapter.

Jones first outlined the principles of the successful casting of metals into molds, showed some views of the modern Lebanon foundry, and then discussed individually the casting of the alloy steels—the chromium, chromium-nickel, and manganese steels being especially stressed. The casting technique for each type was described, and the accompanying physical and corrosion resistant properties, as well as the microstructure, were shown on a single slide for each alloy.

In the discussion which followed comment was made on the extremely high physical properties obtained in these castings. The speaker reminded us that all the castings were of thin section being under one inch, which made these properties possible. The use of Murakami's reagent in etching 18-8 was discussed, as was also the explanation of the high impact strength and elongation of another type of casting—namely, coated electrode arc welds.

The address was well received. Twenty members attended the dinner which preceded it.

NRA AND HARDENING FEATURE FIRST NEW JERSEY MEETING

Jordan Korp Technical Speaker

By Ernest O. Olds

The opening Fall Meeting of the New Jersey chapter was held Sept. 11 at the Elks' Club, Newark, with over 150 members and their guests present.

Preceding the meeting, an excellent dinner was served to about 35. An added timely feature was the dinner talk on "How the NRA Affects Industry," presented by Timothy J. Curtin. Mr. Curtin, who is a member of the NRA Speakers' Bureau, very ably discussed his chosen subject to the interest and enlightenment of those privileged to hear him.

At the meeting proper, Jordan L. Korp, metallurgist for Leeds & Northrup, spoke on "Hardening of Tools and Dies." Long association in this field has qualified Mr. Korp as an expert, and his practical talk aroused so much interest that many participated in the discussion which followed.

METAL CUTTING LITERATURE

O. W. Boston's Bibliography on Subject Has Been Brought Up to Date

In 1930 the American Society of Mechanical Engineers published a "Bibliography on the Cutting of Metals." This work was compiled by Professor O. W. Boston of the University of Michigan. It included some 770 references with short abstracts and covered the period from 1866 to 1930.

Since the publication of this bibliography, Professor Boston has compiled an additional 990 references with abstracts, bringing the work up to date. The budget of the A.S.M.E. will not permit its publication, however. The work is prepared for lithographing in the same general form as the A.S.M.E. publication, and will be published if there is sufficient demand. It will sell at a price covering the cost not to exceed two dollars, depending upon the number of copies required. Those wishing copies may communicate directly with Professor Boston, University of Michigan, Ann Arbor, Michigan.

SHEPHERD WORCESTER TALKER, CHAPTER GIVES METAL COURSE

Report of Oct. 18 Meeting

By R. R. Tatnall

The October meeting of Worcester chapter was held on the 18th, at the Aurora Hotel, with the vice-chairman, W. H. Long, presiding. Following dinner, B. F. Shepherd, of the Ingersoll-Rand Co., gave his excellent talk on "Steel Personality."

[Mr. Shepherd's fine talk has been reported a number of times in the REVIEW and interested readers are referred to previous issues.—EDITOR.] The course in metallurgy which the chapter is sponsoring again this year, with Carl G. Johnson in charge, started Nov. 6, at Worcester Tech. Two hour periods, Monday and Wednesday evenings, for a term of ten weeks, are devoted to the study of iron and steel—structure, heat treatment, and properties—by means of both lecture and microscopic examination of samples.

The charge is \$10 to members and \$15 to non-members. Classes meet in the metallurgical laboratory in the Mechanical Engineering building.

H. L. DERBY, JR. IN CHICAGO

H. L. Derby, Jr., has been appointed manager of the Chicago district of the American Cyanamid & Chemical Corp., with headquarters at 20 No. Wacker Drive, Chicago. The district embraces the territory west of the State of Ohio extending to the Rocky Mountains.

Pack-Morin, Inc., 261 Fifth Ave., New York, designers of automatic equipment, have been retained by the Tennessee Eastman Co., a subsidiary of the Eastman Kodak Co., for the purpose of designing special equipment pertaining to the products of the Eastman Co.

A. C. JONES TALKS ON ALLOY STEEL CASTINGS TO YORKMEN

Sept. 22 Meeting Opens Season

By F. J. Allen and G. J. O'Neill

With the new chairman of the chapter, William F. Allen, presiding, A. C. Jones, research metallurgist of the Lebanon Steel Foundry, lecturing on alloy steel castings, inaugurated the new season for the York Chapter on Sept. 22, in the Manufacturers' Association Building.

In his lecture, which was illustrated throughout by lantern slides, Mr. Jones dealt exhaustively with both the physical and chemical characteristics of a very wide range of alloy steels.

The points stressed by the lecturer as of chief importance with any alloy steel casting were design, furnace or melting condition, pouring technique, including sand conditions, cleaning and subsequent heat treating.

Mr. Jones portrayed clearly the results of varying the chemical composition, together with the observance of the proper technique in connection with the above mentioned points.

His views on the necessary heat treatment of alloy steel castings were of particular importance and around this centered much of the discussion following the close of the lecture.

ROCHESTER HEARS LLEWELYN ON COLD FINISHED STEELS

Talk Creates Much Interest

By J. M. Keating

The first regular meeting of the Rochester chapter for the season 1933-1934 was held at the Engineering Bldg. at the University of Rochester on Sept. 11.

The guest speaker, Clyde Llewellyn, chief metallurgist of Bliss & Laughlin, Inc., Buffalo, was introduced by our new chairman, Jerry Lux, and he gave a talk on cold finished steel. His speech was divided into the following sub-topics: (A) Brief outline of manufacturing procedure; (b) Improvements which have been made in the quality and machinability of Bessemer screw stock in recent years; (c) Effect of cold working on physical properties; (d) Development and general characteristics of open hearth screw stock, especially the high manganese types; (e) comparative machinability and heat treating possibilities of these grades; (f) general discussion of other popular cold finished steels.

Great interest was shown in his talk, especially the improved Bessemer stock as was indicated by the open discussion that followed the speaker's address.

A rising vote of thanks was accorded the speaker for his fine talk.

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The Handbook of Chemistry and Physics is published by the Chemical Rubber Publishing Co., Cleveland. Copies may be ordered through the A.S.S.T. A coupon and description appear on another page of this issue.

SALESMAN WANTED!

Information has reached A.S.S.T. headquarters that a well-known company is looking for a salaried representative who is an experienced salesman with steel industry contacts in the Central West. Those filling these requirements should send their records to box 11-17, A.S.S.T. offices, 7016 Euclid Ave., Cleveland.

STEEL & TUBES SHIFTS MEN

Several changes in personnel have been reported by Steel & Tubes, Inc., Cleveland. A. V. Grove has been transferred from the Cleveland to the Chicago sales offices. R. E. Doyle is now sales correspondent in the Cleveland office, and J. F. Keeler is now sales engineer in Cleveland.

FIRTH-STERLING APPOINTS FENNER

Percy W. Fenner, who for a number of years has represented Latrobe Electric Steel Co. in the Cleveland district, and previously Wm. Jessop & Sons, Ltd., Sheffield, England, has become Cleveland district representative of Firth-Sterling Steel Co.

SOUTHERN TIER MEN LEARN ABOUT FREE CUTTING STEEL

C. F. Goldcamp is Speaker

By Kenneth J. Mackenzie

The first meeting for the 1933-34 season of the Southern Tier chapter was held Sept. 11 at the Jenkins Inn, Waverly, N. Y.

A dinner preceded the regular meeting. There was a very large attendance at both the dinner and the meeting, which was indicative of the interest which was aroused by the subject, "Free Cutting Steel."

This was very ably discussed by C. F. Goldcamp, metallurgist for the Jones Laughlin Steel Corp. He gave a brief historical outline of the pioneer work in the field of free cutting steel and followed through the development to the present day practice. He made interesting comparisons between ordinary low carbon stock and the various grades of so-called free machining steel.

The discussion following the talk was lively, showing that those present were keenly interested in these steels.

FRENCH REVIEWS HIS CAMPBELL LECTURE AT CHICAGO MEETING

Chapter Hears Plans for Season

On Oct. 26 the Chicago chapter was addressed by H. J. French, who reviewed for the chapter his Campbell Memorial Lecture, which he had presented at the National Convention in Detroit.

A large and interested audience was in attendance, and showed, by its attentiveness, a keen interest in the subject matter and appreciation of the manner of presentation.

Prior to the above named event there was a report by Kenneth Hobbie on the educational course arranged for this winter. Charles Saunders reported on the golf tournament, and showed the cup won by the Chicago team in the inter-city match. Adam Steever showed movies which he had taken at the annual outing of the chapter and at the golf tournament.

The educational course and the excellent group of speakers for the monthly meetings will provide an active winter for the Chicago chapter.

SYKES DESCRIBES ALLOY 548 TO SCHENECTADY MEN OCT. 17

Covers Story of Development

By L. L. Wyman

The opening meeting for this year of the Schenectady chapter was held on Oct. 17 at the Hotel Mohawk, Schenectady.

The guest speaker for the evening was W. P. Sykes of the Cleveland Wire Works of the Incandescent Lamp Department of the General Electric Co., who gave a very interesting talk on "The Evolution of a Useful Alloy."

The alloy referred to was that known as "548." The development of this age-hardening family of alloys was discussed with especial attention to structures and relation between structures, composition and physical properties. There were many excellent photomicrographs.

The discussion following the talk showed that the members had found Mr. Sykes' subject very interesting.

DETROIT STARTS THREE-YEAR COURSE IN STEEL METALLURGY

No Charge Made to Members

Detroit chapter has started a 3-year course of lectures on metallurgy covering production, fabrication, treatment, testing and applications of ferrous metals.

Lectures are presented weekly from fall to spring, for three years. Lecturers are such prominent members of the chapter as E. B. Drake of Detroit City College; O. W. McMullan, Timken-Detroit Axle Co.; D. L. Newkirk, Ford Motor Co.; A. L. Boegehold, General Motors Research Corp.; R. G. McElwee, of the D. J. Ryan Foundry; Harry Dietert, U. S. Radiator Co.; R. Schneidewind, Engineering Research Dept., University of Michigan; Carl Joseph, Saginaw Malleable Div., General Motors Corp.; F. A. Melmoth, Detroit Steel Casting Co.; J. D. Corfield, Michigan Steel Castings Co.; E. J. Hergenrother, International Nickel Co.

The course is open to all members, juniors and sustaining members of the A. S. S. T. Further details may be secured from E. G. Brick, chapter secretary, Cadillac Motor Car Co., Detroit.

W. H. BASSETT COVERS ALLOYS OF COPPER AT SPRINGFIELD

Is Speaker at Oct. 16 Meeting

By Robert S. Rose

W. H. Bassett, metallurgical engineer of American Brass Co., was the speaker at the Springfield chapter meeting held on Oct. 16 at the Hotel Kimball.

The substance of the address concerned the analyses and application of numerous commercial copper alloys in addition to pure copper. It was interestingly pointed out that copper, with the exception of iron, was the most valuable of metals from the standpoint of the number of uses and breadth of application.

A summary of the physical properties, response to deformation, and hardenability of many of the alloys, was particularly illuminating.

A business meeting preceded in which Mr. Jones distributed a list of membership withdrawals with a caution that additional members were essential to the welfare of the chapter.

SHOWS HOW WRONG TREATING AND DESIGN CAUSE FAILURES

Deuble Talks to Southern Tier

The October meeting of the Southern Tier chapter was held Oct. 9 at the Jenkins' Inn, Waverly, N. Y.

The speaker was Norman L. Deuble of the metallurgical department, Central Alloy district, Republic Steel Corp. Mr. Deuble spoke on "Service Failures," illustrating his talk with slides which had been carefully prepared, as direct evidence of the reason why a good many parts fail in service or in process of manufacture.

His talk was based on failures which occurred, not from faulty steel manufacture, but from improper heat treatment or design.

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STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912.

Of THE REVIEW of the American Society for Steel Treating, Published six times a year, at Cleveland, Ohio, for November 1, 1933, State of Ohio, County of Cuyahoga, ss. Before me, a notary public, in and for the state and county aforesaid, personally appeared Ray T. Bayless, who, having been duly sworn according to law, deposes and says that he is the editor of THE REVIEW of the American Society for Steel Treating, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 411, Postal laws and regulations to wit:

1.—That the names and addresses of the publisher, editor, managing editor, and the business managers are: Publisher, American Society for Steel Treating, 7016 Euclid Ave., Cleveland, Ohio; Editor, Ray T. Bayless, 7016 Euclid Ave., Cleveland, Ohio; Managing Editor, John G. Mapes, 7016 Euclid Ave., Cleveland, Ohio; Business Manager, W. H. Eisenman, 7016 Euclid Ave., Cleveland, Ohio.

2.—That the owner is: The American Society for Steel Treating, 7016 Euclid Avenue, Cleveland, Ohio, which is an educational institution, the officers being: President, W. B. Coleman; Vice-President, W. H. Phillips; Secretary, W. H. Eisenman; Treasurer, A. T. Clamage; Directors, A. H. d'Arcambal, C. F. Pascoe, H. D. McKinney, H. G. Keshian and R. S. Archer. All above officers of the American Society for Steel Treating, address at 7016 Euclid Avenue, Cleveland, Ohio.

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(Seal) Arthur T. Wehrle, notary public. (My commission expires January, 1935.)

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